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USSR BUYING BRAZILIAN QUARTZ TO COMPENSATE FOR VIRTUAL
CESSATION IN SHIPMENTS FROM CHINA

OFFICE OF RESEARCH AND REPORTS

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USSR BUYING BRAZILIAN QUARTZ TO COMPENSATE FOR VIRTUAL
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According to official Soviet trade statistics, imports of piezo-electric (radio-grade) quartz from Communist China totaled only 2,200 pounds in 1960, compared to a yearly average of 127,000 pounds from 1956 through 1959. 1/ Beginning in late 1959 or early 1960, according to American quartz dealers in Brazil, large amounts of Brazilian high-grade quartz have been shipped to the USSR via firms in Western Europe in order to circumvent the Western embargo on such shipments. 2/ These developments strongly suggest that the USSR has been forced to go outside the bloc to meet its requirements for quartz because of the virtual cessation in shipments from China.

High grade quartz crystal (including both radio-grade and optical grade, which is radio-grade also suitable for optical uses) is used to stabilize frequencies in communications equipment and for telephone resonators, transducers, filters, and other important electronic components. With the increasing sophistication of communications equipment and scientific instruments and the expansion of new uses such as in missile programs, high-grade quartz is becoming increasingly important to the electronics industry of both the bloc and the free world. Although synthetic quartz is being produced in both the bloc and the free world, natural quartz is still much more important both qualitatively and quantitatively. For instance, US consumption of natural electronic-grade quartz in 1960 was 230,000 pounds, while total US capacity for production of synthetic quartz was only 30,000 pounds. 3/

The USSR has large deposits of quartz, but the proportion of these deposits suitable for electronic uses is not known. The only other important deposits in the bloc are in Communist China. The following comparison of US consumption (which exceeds Soviet consumption) and Chinese exports to the USSR shows that until recently China has been a major bloc supplier of radio-grade quartz and has probably been producing enough to meet current bloc requirements. Data for Soviet consumption are not available.

Year	USSR Imports from China 4/	United States Consumption 5/
(pounds of raw quartz)		
1955	22,000	134,000
1956	136,700	162,000
1957	94,800	182,000
1958	127,900	158,000
1959	147,800	210,000
1960	2,200	230,000

If China is no longer supplying high grade quartz, the USSR has three alternatives: production of synthetic quartz; expanded exploitation of domestic resources; or clandestine imports from the West. The production of synthetic quartz is difficult and expensive at present, and although the USSR and East Germany have been devoting large efforts to research and development in this area, it is unlikely that the USSR is currently meeting its requirements in this way.

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The Soviets have claimed to have huge deposits of very excellent quartz and the possibility of a rapidly expanding domestic production of raw high grade quartz cannot be discounted. Quartz mining, however, is a labor-intensive industry more suited to a subsistence economy such as China's or the depressed areas of Brazil and Madagascar. The USSR has been expanding its quartz mining operations in recent years but the magnitude of past imports from China and the apparent increase in clandestine shipments from Brazil indicate that the USSR is probably not yet self-sufficient in quartz production.

Quartz suitable for electronic uses is available outside the Bloc in only two places, Brazil and Madagascar. Brazil accounts for 95 percent of free world production while Madagascar accounts for the remainder. The bloc was quite active in attempting to procure Brazilian quartz clandestinely until 1957, but US purchases under the stockpiling program (1946-56) and the Barter List (1956-58) controlled the market. From 1957 to 1960 almost no instances were noted of bloc attempts to procure Brazilian quartz clandestinely, although some finished crystals reached Poland under the special Polish policy.

Since late 1959, however, according to American quartz dealers in Brazil, three new firms in Rio de Janeiro have been shipping high-grade quartz to two European firms, one in France and one in West Germany. Neither of these European firms previously handled Brazilian quartz, although the French firm dealt to some extent in quartz from Madagascar. The firms in Brazil reportedly are paying 30-40 percent above prevailing prices and buying up many of the best lots of quartz available. One shipment of 30,000 pounds was reported in the autumn of 1961. 6/

Because of the high prices being offered and the large amounts involved, it is likely that Brazilian quartz is reaching the USSR through these channels. According to the European contacts of the established quartz dealers, the quartz going to Europe is not appearing on the market although small lots are being resold at less than cost, apparently as a cover. Small amounts of quartz have been reaching the bloc for several years through well-established channels, but the scope of clandestine diversion activity seems to have increased markedly in 1960, and especially in 1961.

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Analyst:

Coord:

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5. US Bureau of Mines (3, above)
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